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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,821	08/21/2003	Naoto Yamano	YAMA3008/JEK	6178

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EXAMINER

ROGERS, DAVID A

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/644,821	Applicant(s) YAMANO ET AL.	
	Examiner David A. Rogers	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 3,4 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

2. Applicant's election with traverse of claims 1-4 in the reply filed on 20 September 2004 is acknowledged. The applicant has amended the claims in their response. Accordingly the previous requirement for restriction is withdrawn.

Specification

3. The disclosure is objected to because of the following informalities.
 - a. Page 2, lines 18-21 replace the phrase
--On occasion when riding in the air current and the smoke particles in the air have been carried to the image-formation position, the light--
with
--Smoke particles in the air are carried to the image-formation position.
The light--.
 - b. Page 12, line 15 replace --a sampling-- with --a prior art sampling--.
 - c. Page 12, line 17 replace --conventional example-- with --conventional prior art example--.
 - d. Page 12, line 19 replace --conventional example-- with --conventional prior art example--.

- e. Page 13, line 7 add --(see FIG. 7)-- after the reference number 42.
- f. Page 14, line 4 add --(FIG. 8) of the aspirator-- after reference number 36.
- g. Page 16, line 26 replace --floodlights-- with -emits--.
- h. Page 19, line 22 replace -- and becomes-- with --and the system becomes--.

It is suggested that the applicant provide a substitute specification, excluding the claims but otherwise incorporating the above changes and the applicant's previously submitted changes. This is to ensure that there are no errors when printing the application should the case become allowed.

A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. An accompanying clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

Claim Objections

4. Claims 3, 4, and 7 are objected to because of the following informalities.
 - a. Claim 3 recites --reciprocally-- on line 7. It is not clear what is meant by the applicant by the use of the term --reciprocally--.
 - b. Claim 4 recites --said expanded part is formed sequentially by said aspirator--. It is not clear from reading the specification what this is referring to.
 - c. Claim 7 recites --reciprocally-- on line 14. It is not clear what is meant by the applicant by the use of the term --reciprocally--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of United States Patent 3,794,909 to Smith.

The admitted prior art, shown as figure 13 in the application, is a smoke detection system comprising a lead-in tube 9ri 103a) and an aspirator (reference item 108) positioned downstream of a smoke sensor (reference item 104). The aspirator forms the actuator mechanism as a rotating part that

discharges air. The lead-in tube, as shown, forms a bend and is connected to the aspirator.

Forming the lead-in tube as a straight tube is well within the scope of one of ordinary skill. This requires only the repositioning of the aspirator by 90 degrees. See *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice).

However, in the event that is not obvious to provide a straight lead-in tube to an aspirator, Smith teaches such an apparatus. In Smith a particle detector comprises a lead-in tube (reference item 24) coupled to a suction unit (aspirator) (reference item 42). The lead-in duct and the suction device are oriented substantially on the same axis.

It is known that bent conduits are prone to particle collection on their inner surface due to impingement with the inner surface. Removal of the bent portion of the lead-in tube of the admitted prior art would eliminate the region where particles (dust, debris, smoke, etc.) tend to accumulate. Particles that accumulate and are subsequently dislodged at a later period may give a false indication of a problem when sensed by the downstream particle detector.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the admitted prior art, alone or in view of Smith, to provide a lead-in tube with no bends that is substantially on the same axis as an aspirator.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Smith as applied to claim 1 above, and further in view of United States Patent 6,585,791 to Garito *et al.*

The applicant's admitted prior art in view of Smith teaches a system for pulling air containing smoke using an inlet tube connected to an aspirator (vacuum/suctioning device).

Garito *et al.* teaches a suction apparatus for pulling smoke from a region. The apparatus comprises a suction motor (reference item 20) and a inlet tube (reference item 18). The inlet tube is connected to the apparatus using a continuously-expanding part, as seen in figures 1 and 2.

The choice of connecting member style is a matter of design preference. One of ordinary skill in the art would select a connecting member that allowed the entire inlet to the apparatus to be covered, i.e., no air leaks.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of the applicant's admitted prior art in view of Smith with the teachings of Garito *et al.* to provide an expanding connector for an inlet tube.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Smith and Garito *et al.* as applied to claims 1 and 2 above, and further in view of United States Patent Application Publication 2003/0131891 to Sinur *et al.*

The applicant's admitted prior art in view of Smith and Garito *et al.* teaches an inlet tube for pulling air containing smoke using an aspirator (vacuum/suctioning device). As seen in figure 2 of Garito *et al.* the expanding part is connected to the tube using a connector (no numbered). The applicant's admitted prior art in view of Smith and Garito *et al.* does not teach a continuously smooth curved inner surface.

The forming of a continuously smooth inner surface is a matter of design choice. Also, Sinur *et al.* teaches a connecting member comprising walls (reference items 142 and 146). As seen in figure 18 there is a continuously smooth inner surface. Furthermore, Sinur *et al.* teaches that all four walls can be formed of curved sections, which would provide a substantially semispherical inner surface. Here Sinur *et al.* teaches that these types of surfaces/surface transitions are beneficial in that they reduce turbulence and noise.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of the applicant's admitted prior art in view of Smith and Garito *et al.* with the teachings of Sinur *et al.* to provide a connecting member with a continuously smooth inner surface.

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Smith and Garito *et al.* as applied to claims 1 and 2 above, and further in view of Japanese Laid Open Patent Application JP 10267803A to Iwai.

The applicant's admitted prior art in view of Smith and Garito *et al.* teaches the use of an inlet tube for drawing air from a region using an aspirator. The applicant's admitted prior art in view of Smith and Garito *et al.* does not teach the use of a flow restriction region in the inlet tube.

Iwai teaches an apparatus for drawing air using an aspirator (reference item 31). The apparatus comprises inlet tubes (reference items C11 and C12). Within each inlet tube is a flow restriction member (reference items 11 and 12). It is taught that the flow restricting devices help adjust the flow rates of air in the inlet tubes.

The choice of a preferred diameter of the aperture of the flow restriction device, being 30% to 70% of the inlet tube's diameter, is a matter of design choice and would depend on the desired flow rate after the restriction device. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed.Cir.1984), *cert. denied*, 469 U.S.830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently

than the prior art device, the claimed device was not patentably distinct from the prior art device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of the applicant's admitted prior art in view of Smith and Garito *et al.* with the teachings of Iwai to provide a flow restriction device in the inlet tube.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Smith and Garito *et al.* as applied to claims 1 and 2 above, and further in view of United States Patent 6,615,831 to Tuitt *et al.*

Claim 7 merely describes the use of a normal centrifugal fan. The applicant's admitted prior art, as seen in figure 13, shows a centrifugal fan, although not positioned on its side. Repositioning the fan to be on its side is mere relocation of the known parts of the prior art. The fan of the known prior art more than likely has a continuously smooth inner discharge surface. Furthermore, centrifugal fans are also widely used in the prior art. See figures 1 and 2 of Kim. In Kim one can clearly see the continuously smooth inner surface of the discharge portion.

See also MPEP §2144.08 and *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 8 USPQ2d 1323 (Fed. Cir. 1988) (Claimed agricultural bagging machine, which differed from a prior art machine only in that the brake means were hydraulically operated rather than mechanically operated, was held to be

obvious over the prior art machine in view of references which disclosed hydraulic brakes for performing the same function, albeit in a different environment.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of the applicant's admitted prior art in view of Smith and Garito *et al.* with the teachings of Kim to provide a smoke detector comprising a centrifugal fan with a continuously smooth inner discharge surface.

Conclusion


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Rogers whose telephone number is (571) 272-2205. The examiner can normally be reached on Monday - Friday (0730 - 1600).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


da

22 October 2004


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